

# Business Tries Retraining Operators For Dvorak Keyboards

BY NELLIE L. MERRICK

The University of Chicago

**M**ANY subscribers who read the articles in the 1939 issues of *AMERICAN BUSINESS* on the Dvorak simplified typewriter keyboard will be interested to know that a number of experiments are being conducted by business men to determine the feasibility of retraining typists to use the Dvorak keyboard in business.

One of the business men most active in studying the benefits of the Dvorak keyboard is C. L. Stivers, office manager of Jewel Tea Company and former vice president of the Office Management Division of the American Management Association. Encouraged by the results of an experimental try-out in retraining one typist under his supervision in the Jewel Tea Company to use the Dvorak keyboard, Mr. Stivers proposed the retraining of groups of employed typists in several centers. This re-

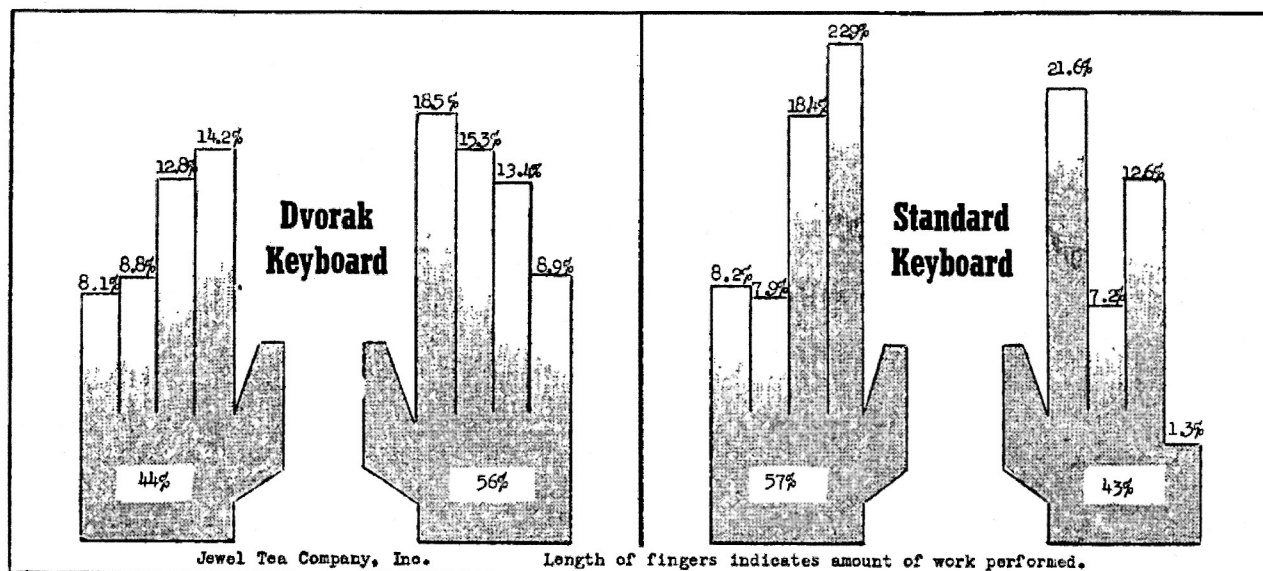
training was to be considered experimental in nature by those firms whose typists took part. Realizing the value of an exploratory experiment designed to develop a feasible plan for such retraining, to indicate teaching procedures, and to identify advantageous teaching materials, it was proposed that the projects be delayed until Dr. August Dvorak and his assistants found it possible to conduct a preliminary project.

The first retraining project was conducted in Minneapolis, at the Minnesota School of Business, where O. M. Correll, president, provided the facilities of his school. Four employed typists from Investors Syndicate, Pillsbury Flour Mills Company, and Educational Publishers, one unemployed old keyboard typist, and five high-school-age beginning typists participated in the Minneapolis ex-

periment, under the direction of Dr. Dvorak of the University of Washington, assisted by Lenore Fenton of the same school.

In Seattle on October 9, under the sponsorship and in the offices of the United Pacific Insurance Company, five employed typists, two unemployed typists, and one beginner started to learn the simplified keyboard. The five office typists are employed by the United Pacific Insurance Company and the Northwestern Mutual Life Insurance Company.

As part of the American Management Study (Office Management Division) directed by C. L. Stivers, six employed Chicago typists began their retraining on October 9 at the Bryant and Stratton Business College, with the cooperation of T. C. Swiger of that school, in consultation with the writer. These typists were from



C. L. Stivers, of the Jewel Tea Company, had these distorted drawings of hands made to illustrate the more even distribution of finger work when the typist is using a machine equipped with the Dvorak simplified keyboard for typewriters

the following Chicago firms: Continental Illinois National Bank and Trust Company, Montgomery Ward and Company, Commonwealth Edison Company, Sears Roebuck and Company, Kraft-Phenix Cheese Corporation, and the American Book Company.

The companies participating in the Chicago study were asked to select girls whose production has been and will be accurately measured so that it can be compared with past production, and who have leveled off in production to the extent that their output has not varied more than 5 per cent during the previous six months. Other factors were to be kept constant during and after the training period, with production reports continuing for some time after the training period has been completed.

Keeping in mind the fact that employers would want their typists back at work as soon as possible even at decreased production rates, a retraining plan was proposed and followed that would enable these typists to be back at work after *two weeks* of instruction and practice on the Dvorak keyboard. It is recommended that 100 to 105 hours of instructional practice, over a ten-week period, is the best procedure, although in the Chicago study the total time may be only 90 hours.

When a typist begins to relearn on the Dvorak keyboard, she not only must stop using the standard keyboard, she should not even think about it. In these retraining experiments the following schedule was used:

*Two weeks*—3 hours of instruction and practice per day—a morning and an afternoon period of 1½ hours each. (The typist is out of stenographic production and is employed at work other than typing.)

*Eight weeks*—1½ hours of instruction and practice per day—either morning or afternoon.

After the initial two-week instructional practice period, employed typists can be expected to return to regular office typing on

the Dvorak keyboard at approximately 50 to 60 per cent of their old keyboard production, although in the case of several employed typists in these studies this has been reported to have been as high as 82 per cent.

Best retraining results can be obtained when typists are under group instruction, under the supervision of a reasonably competent teacher. Many firms seem to prefer that the instructional practice be carried on away from the office, although several have indicated that if a large number of their personnel (a third, for instance) were being retrained at a time, it would be done under their own roof and under the direction of their own typing supervisors.

Employed typists, office supervisors, and others are surprised that typewriting skill on the standard keyboard can be replaced and increased on the Dvorak keyboard in a short time, and with very little confusion after the first two or three days.

Records show that in from 43½ to 94 hours of instructional practice (average of 61 hours), simplified keyboard rates for the retrained typists in these three studies averaged 115 per cent of their standard keyboard rates (net scores on 5- and 10-minute tests, scored according to International Rules). The per cent of gain ranged from 64 to 227 per cent and represents only part of the entire training period. The upper limits of their gains will not be known, of course, for months or even years.

Some individuals regained and exceeded their production rates even before they had the same proportion of skill back. This undoubtedly is explained by the greater smoothness and ease possible on a scientific keyboard that is based on word patterns in the English language and fitted to hand and finger skill.

The writer has yet to find a standard keyboard typist who does not prefer the Dvorak keyboard, once having learned to use

it. Frequently these typists express regret that they couldn't have learned that way in the first place, and sympathize, tactfully or otherwise, with their associates who still have to use an awkwardly arranged keyboard with its required excess motions. After the initial period of confusion, which is surprisingly short, they report with pride as early as the fourth or fifth week that they can finish a cylinder in the same length of time as formerly.

One of the chief values of these and similar experiments lies in their demonstration that employed typists can be profitably retrained on the Dvorak keyboard. Employed typists can be retrained to use the Dvorak keyboard with financial advantage to the employer, if the typists are paid during the retraining period and remain one year after being retrained. If the employer continues the typists' regular salaries during the two weeks when they are not in typing production and for the seven or eight weeks when they spend 1½ hours a day in instruction and practice, it is conceivable that it would cost the employer (assuming he paid the cost of instruction) approximately \$100 to retrain each typist. If his pay schedule is \$20 per week (\$1,040 per year) and if he obtains as high as 33 1/3 per cent greater production from each typist or about \$350 in greater production in one year, this will repay him for the instructional costs, for any necessary machine changes, and leave a productional efficiency balance of more than \$200 per typist, in his favor. If his schedule is \$30 per week (\$1,560) the \$520 annual efficiency saving will give him a productional efficiency return of about \$400 per typist in the first year, after the ten-week instructional period is completed. Thereafter, his efficiency balance per employee will be \$350 to \$520 per year, depending on the salary schedule, as long as the retrained typists remain in his employ.